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Bladder Leiomyosarcoma: Report of Three Cases

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Three patients with leiomyosarcoma of the urinary bladder are presented. One case showed urothelial carcinoma in situ also. The mode of presentation and operative findings were similar in two female patients, whereas the lesion seemed to be more aggressive in a male patient.

Non-epithelial tumours of the urinary bladder are quite rare and malignant tumours of muscle origin are quoted as being the second most frequent cancer after urothelial carcinomas [2, 3]. There is no known association with other bladder pathology or systemic disease. We report on three leiomyosarcomas, in which one case had urothelial carcinoma in situ also.

Case reports

Case 1. A 60-year-old woman presented with dysuria, frequency and haematuria. Bladder haemorrhage necessitated urinary catheterization two weeks before admission. No pathological alterations were found on physical examination. Laboratory tests revealed trace proteinuria, and plenty of erythrocytes in urinalysis. Descending cystography revealed a 3×4 cm defect at the upper margin of the bladder. Cystoscopy showed two nodules measuring 3×4 cm and 2×1 cm with smooth surfaces and scattered foci of necrosis. Operation was performed with a lower hypogastric incision and a pedunculated tumour with two lobes showing the above-mentioned features was found. Tumour excision was done along with the superficial muscle layer. Pathological examination showed a spindle cell cancer with smooth muscle differentiation. The patient was in good health after six months.

Case 2. A 50-year-old man was found to have a bladder tumour during the work-up of gross haematuria of four days' duration. He had operations for bilateral inguinal hernias at 7 years of age and since then has had forced micturition. At age 20 a bladder stone was removed. Physical examination revealed no abnormalities. Laboratory tests showed moderate proteinuria and plenty of erythrocytes in urinalysis. Blood urea nitrogen was 55 mmol/l, creatinine 265.2 mmol/l and ESR 18 mm/h (Westergren). IVP showed moderate dilatation of the pelvis and

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ureters. Urinary bladder was big with multiple filling defects. Cystoscopy could not be evaluated precisely due to necrotic and coagulated material. Operation was made with a suprapubic incision and a soft, highly necrotic, friable mass about 7 cm diameter originating from the left lateral wall was resected by electrocauterization. Both ureteral orifices were freed as urine readily came out. Pathological examination showed highly necrotic spindle cell tumour with long fascicles again showing smooth muscle features. The patient could not be seen again after his departure from the hospital.

Case 3. A 70-year-old woman presented with haematuria of one month duration. Physical examination was noncontributory. Urinanalysis showed plenty

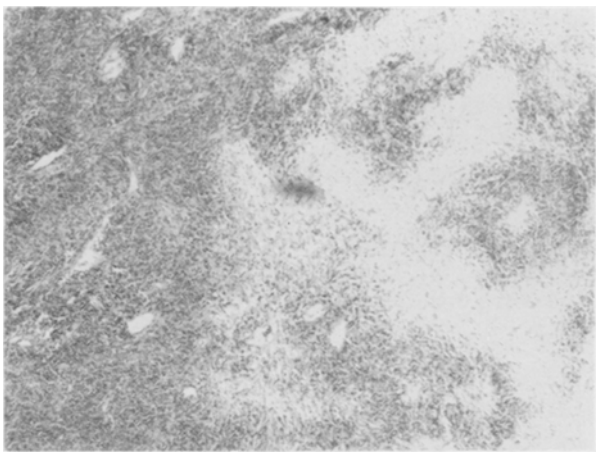

Fig. 1. Low-power view of tumour showing myxoid areas alternating with cellular growth (haematoxylin and eosin)

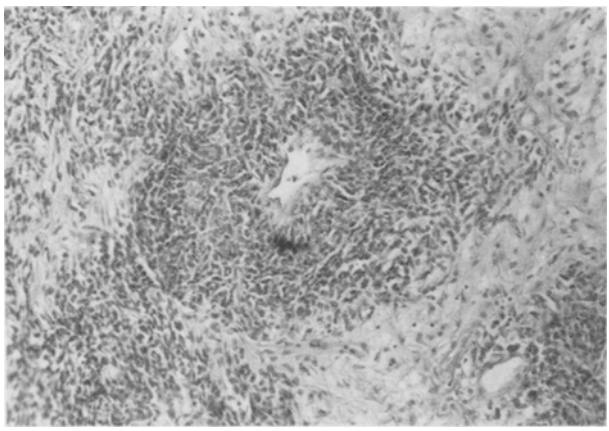

Fig. 2. High-power view of cellular spindle cell tumour (haematoxylin and eosin)

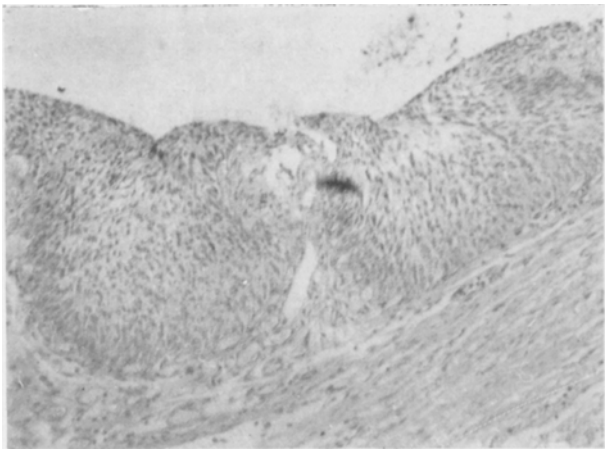

Fig. 3. Transitional epithelium above the tumour reflecting atypical hyperplasia with crowding of cells (haematoxylin and eosin)

of erythrocytes at microscopy. Laboratory tests revealed blood urea nitrogen 5.0 mmol/l, creatinine 106.1 mmol/l, ESR 90 mm/h (Westergren). Cystography showed a large filling defect at the middle and lateral part of the bladder wall. Ultrasonographic examination gave a heterogenic echoic mass with dimensions of 80×54 mm. At cystoscopy the mass was seen as having a smooth polypoid intact surface. At the right lateral wall a haemorrhagic area of 0.5 cm was noticed and biopsied. Biopsy revealed a non-invasive transitional cell carcinoma grade II–IV. Operation was done with a suprapubic incision and partial cystectomy was performed. The previously biopsied area was cauterized. Pathological examination showed a spindle cell cancer with alternating myxoid areas (Figs 1 and 2) and also atypical transitional cell proliferation on the surface (Fig. 3). This was interpreted as severe dysplasia approaching carcinoma in situ. This patient is under follow-up and has been disease-free after eight months.

Discussion

As it is frequently quoted, non-epithelial urinary bladder tumours are rare, probably less than 1 per cent [2, 5]. These three cases are from two different centers which serve a large population of this country. The first two patients were reported previously in a local publication [4] and then adequate follow-up could not be made. The last patient has been in good health without any supplementary therapy since her operation. The presentation of our cases showed a main common symptom, i.e. gross haematuria. The tumours were well documented by radiographic studies and cystoscopy. In the second case the mass was extensive enough to cause obstructive uropathy. Similar to recent reports we too had a female

preponderance, however, the patients were older than the ones reported [5, 6]. We could not discern any aetiologic or predisposing factor. A recent publication stressed an association with long-term cyclophosphamide therapy for lupus nephritis [6]. The occurrence of non-invasive transitional cell carcinoma in our third case reflects an interesting presentation that makes the management complex. Even in cases that could be excised adequately there is a well-documented risk of local recurrence of bladder leiomyosarcoma [1]. This last patient is under periodic control by urinary cytology at monthly intervals.

Our pathological diagnoses were made by conventional histochemical methods supplemented with peer view of pathologists at two institutions. Immunohistochemical methods or ultrastructural examinations could not be made. None of the lesions were of high grade but the second case showed extensive necrosis and frequent mitoses reflecting a rapid growth. In the last case there was a myxoid component with poor cellularity and lack of mitoses; however, the predominant pattern was still a compact arrangement of cells showing active growth.

References

1. Alabaster, A. M., Jordan, W. P. Jr., Soloway, M. S., Shippel, R. M., Young, J. M.: Leiomyosarcoma of the bladder and subsequent urethral recurrence. *J. Urol., 125,* 583 (1981).
2. Droller, M. J.: Bladder sarcoma. In: Campbell's Urology. W. B. Saunders, Philadelphia 1986.
3. Koss, L. G.: Tumors of the Urinary Bladder. Atlas of Tumor Pathology, Vol. 11. AFIP, Washington, D. C. 1975.
4. Özdiler, E., Günalp, I., Özteke, O., Aydin, E.: Leiomyosarcoma of the bladder (in Turkish). *J. Ank. Med. Sch., 4,* 145 (1982).
5. Swartz, D. A., Johnson, D. E., Ayala, A. G., Watkins, D. L.: Bladder leiomyosarcoma: A review of 10 cases with 5-year followup. *J. Urol., 133,* 200 (1985).
6. Thrasher, J. B., Miller, G. J., Wettlaufer, J. N.: Bladder leiomyosarcoma following cyclophosphamide therapy for lupus nephritis. *J. Urol., 143,* 119 (1990).